

Solid Waste Advisory Committee Preliminary Draft

Solid Waste Master Plan: DRAFT Proposed Revisions Solid Waste Advisory Committee - March 24, 2005

1. INTRODUCTION

2005 Solid Waste Master Plan Revisions

In December 2000, the Massachusetts Department of Environmental Protection (DEP) published the *Beyond 2000 Solid Waste Master Plan (Beyond 2000 Plan.)* This plan established a long-term vision, as well as specific policies and strategies, for how to manage the Commonwealth's solid waste from 2000 through 2010.

DEP committed to reviewing the *Beyond 2000 Plan* after several years of implementation and updating it as needed. DEP conducted this review in late 2004 / early 2005, which included several meetings with the Solid Waste Advisory Committee and consultation with other interested stakeholders. This review affirmed the overall goals and framework of the *Beyond 2000 Plan*, but recognized that changes in the waste management system – including stagnant recycling rates, decreasing in-state disposal capacity, and cuts in state funding for waste reduction programs – required revisions to the Plan to adjust and refocus strategies for achieving the Plan's goal of 70% waste reduction. The *2005 Plan Revision* revises DEP's solid waste updates the strategies in the *Beyond 2000 Plan* to adjust to these recent changes and to take advantage of new opportunities.

Background

Since the *Beyond 2000 Plan* was published, DEP, municipalities, citizens, businesses, and solid waste, recycling, and composting service providers achieved significant accomplishments in reducing waste and furthering sustainable solid waste management. Highlights of these accomplishments are found in three Progress Reports on the *Beyond 2000 Solid Waste Master Plan*, available from DEP's website at www.mass.gov/dep. However, at the same time, changes in the state's fiscal health and in the solid waste management landscape created significant challenges that have led to slower progress than anticipated in meeting the *Beyond 2000 Plan*'s goals:

- Waste reduction (which is a measure of source reduction plus recycling) increased from 51 percent to 55 percent from 1999 to 2002¹;
- Recycling rates remained relatively flat from 1999 to 2003;
- Total generation increased 6 percent from 1999 to 2003, from 12.6 million to 13.2 million tons.
- Total disposal dropped 3 percent from 1999 to 2003, from 6.5 million to 6.3 million tons.
- Net export for disposal has continued at about 1.5 million tons per year.

¹ The waste reduction rate for 2003 will not be available until July 2004, as it is dependent on Gross State Product data that are expected to be released in early summer.

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The *2005 Plan Revision* addresses a number of key trends in solid waste management. Net export of waste for disposal is projected to grow throughout the remainder of this decade as in-state landfills fill up and limited new capacity comes on-line. Net export is projected to grow to more than 2 million tons by 2010 and nearly 3 million tons by 2012. As a result, Massachusetts will need to rely on increased export of solid waste to meet its waste management needs. The *2005 Plan Revision* recognizes that Massachusetts will likely continue to be a net exporter of solid waste at least for the remainder of this decade.

From fiscal year (FY) 2002, when state recycling funding peaked, to FY 2005, state solid waste program staffing decreased by 25%, and grant funding decreased by 83%, from approximately \$12 million to \$2 million. Local governments experienced similar cuts during the same period and continue to face very tight budgets. This has significantly curtailed DEP's ability to fully implement many of the initiatives in the *Beyond 2000 Plan* and led DEP to place greater emphasis on strategies that leverage resources and build partnerships.

Over the past five years, seven new construction and demolition (C&D) processing facilities have been built, adding approximately 800,000 tons of annual processing capacity in Massachusetts. Most of the material produced by these facilities is used at active and inactive landfills as daily cover and shaping and grading material, which has resulted in odor and operational problems in a number of cases. DEP will focus on improving management of these materials while continuing to develop improved markets for C&D materials less dependent on landfills.

Diversification of organics (e.g., food waste) has grown over the past several years and shows significant future potential. However, this growth is limited by a lack of in-state organics processing capacity, with a projected need of more than 380,000 tons per year by 2010 versus current permitted annual capacity of 130,000 tons. Because it is not cost-effective to transport food waste long distances, it will become increasingly important to develop local processing capacity to support increased diversion from large generators.

DEP is committed to the aggressive waste reduction goals established in the *Beyond 2000 Plan* and believes continued progress can be made in reducing waste by working in close partnership with a wide range of stakeholders. While DEP's overall vision and goals have not changed, DEP and other stakeholders recognize that, at least for the immediate future, current funding and staffing reductions require new waste reduction strategies that are less dependent on state funding. The *2005 Plan Revision* establishes strategies that seek to increase enforcement of existing regulatory requirements, build new partnerships, leverage resources from a wide range of stakeholders, increase efficiency, and reduce costs for businesses and municipalities.

2. WASTE REDUCTION STRATEGY

2010 Waste Reduction and Recycling Rate Goals

DEP believes it is important to maintain an aggressive waste reduction goal to provide a clear focus for the Commonwealth's waste reduction strategies. Therefore, DEP will maintain the 70 percent waste reduction goal by 2010 established in the *Beyond 2000 Plan*.

DEP continues to believe that a waste reduction goal that incorporates source reduction is a better measure than recycling alone; however DEP has found that a recycling goal is easier for the general public to understand. Therefore, DEP has established a recycling goal of 56 percent, nine percentage points above the 2003 recycling rate. DEP estimates that solid waste generation will be approximately 15.4 million tons in 2010 (see page xx). A 56 percent recycling goal would require 8.6 million tons of recycling in 2010, approximately 2.4 million tons more than the 6.2 million tons recycled in 2003.

2010 Toxicity Reduction Goals and Strategies

The *Beyond 2000 Plan* established a goal to "Substantially reduce the use and toxicity of hazardous products and provide convenient collection services to all residents and very small quantity hazardous waste generators." This goal has proven to be difficult to achieve. Reducing the toxicity of the waste stream poses unique challenges and is more adversely affected by funding cuts than other waste reduction programs. In part because DEP no longer can provide funds to municipalities through the Municipal Recycling Incentive Program (MRIP), many municipalities have reduced or even eliminated hazardous product collection programs in recent years. Unlike recycling programs, which have the potential to help cities and towns save money, running hazardous product collection programs costs cities and towns money. Manufacturer funding or take-back programs are another option, but are currently not widespread. Nor have manufacturers taken aggressive steps to reduce the toxicity of their products.

DEP will maintain the toxicity reduction goal laid out in the *Beyond 2000 Plan* as a long-term goal. Currently, an estimated 65 percent of residents have access to comprehensive, convenient programs, while residents in a number of other communities have access to somewhat less convenient collection opportunities. DEP's immediate priority is to help maintain existing local and regional hazardous product collection programs and facilities, while making limited progress in specific target areas such as mercury products. DEP will seek to maximize sharing of reciprocal collection program access among nearby municipalities through regional agreements. DEP also will partner with other state agencies and manufacturers to reduce the toxicity of products entering the waste stream through a combination of voluntary partnerships, education and, where possible, regulatory and statutory initiatives.

Key Waste Reduction Strategies

While in a tighter fiscal environment, DEP recognizes that different waste reduction strategies are necessary to make further progress towards the Commonwealth's waste reduction goals. These strategies will emphasize the following:

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- **EXPAND AND TARGET COMPLIANCE AND ENFORCEMENT** – DEP will use focused compliance and enforcement tools to increase waste reduction. DEP will target its resources on waste ban enforcement and ensuring solid waste facilities operate safely.
- **LEVERAGE RESOURCES/BUILD PARTNERSHIPS** – DEP will establish formal and informal agreements and partnerships with product manufacturers, retailers, trade associations, community groups and cities and towns; leverage matching grant contributions; seek additional funding sources; and coordinate with other state planning initiatives through the Office of Commonwealth Development that can increase waste reduction.
- **BUILD COST-EFFECTIVE PROGRAMS BASED ON RECYCLING MARKET OPPORTUNITIES** – Strong recycling markets provide excellent opportunities to reduce waste cost-effectively. Due to rapidly growing international markets, especially in Asia, scrap paper is now the number one American export by volume and exports of U. S. scrap of all kinds grew to \$8.4 billion last year, more than double the 1999 total. This strong offshore demand has raised payments for paper recycling to between \$80 to \$120 per ton and created a recycled paper supply shortage for American paper mills². However, plenty of paper remains in the waste stream and Massachusetts businesses and residents are literally throwing away money. DEP estimates that more than 1.5 million tons of paper, with an estimated value of more than \$100 million, is thrown away each year by Massachusetts residents and businesses³. Similar market dynamics exist for other recycling commodities. DEP will provide hands-on technical assistance to municipalities and businesses that emphasizes waste reduction initiatives that save money such as Pay-As-You-Throw, improved recycling and solid waste contracting, increased participation in existing programs, and regional program coordination.
- **FOCUS ON PRIORITY MATERIALS/SECTORS** – DEP will focus efforts on waste streams with the greatest additional diversion potential and benefits, including:
 - **Commercial Municipal Solid Waste (MSW): organics (especially food waste) and paper and cardboard** – These materials have a combined additional diversion potential of more than 1.6 million tons⁴ in the commercial sector. Both of these streams have the potential to be recycled or composted cost-effectively well beyond existing levels.
 - **Residential MSW: organics (leaves, yard waste and food waste) and paper (including cardboard)** – These materials have combined additional diversion potential of more than 1.1 million tons in the residential sector. Both of these streams, especially paper, have the potential to be recycled or composted cost-effectively well beyond existing levels.

² Industry News: U.S. Paper Recycling Reaches a Record High, Source: Knight Ridder Washington Bureau, February 09, 2005.

³ “It’s Time to Be Proactive: Let’s Use Our Regional Strengths”, presentation by Pete Grogan, Weyerhaeuser, NERC Fall Conference, October 27, 2004.

⁴ Figures cited for additional diversion potential throughout this report are based *Waste Reduction Program Assessment and Analysis for Massachusetts*, prepared for DEP in December 2002, by the Tellus Institute.

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- **C&D: wood, asphalt shingles, and gypsum wallboard** –Wood and asphalt shingles represent the largest un-diverted portion of C&D waste. Recycling gypsum wallboard will reduce hydrogen sulfide odors at landfills and landfill closure projects⁵.
- **Toxic Products:** Reducing the use and ensuring the safe disposal of mercury-containing products will continue to be a priority, as well as other high priority substances such as lead, arsenic, and PCBs.

Throughout the remainder of this chapter, proposed strategies for each program area are grouped in three categories:

- **New:** Initiatives that were not included in the *Beyond 2000 Plan*. In some cases, these initiatives are entirely new; in other cases, they began within the past several years.
- **Revised/Expanded:** Initiatives that have been or will be significantly changed since the *Beyond 2000 Plan*.
- **Continued:** Initiatives in the *Beyond 2000 Plan* that DEP is proposing to maintain as they are.

Commercial Waste Reduction Strategy

DEP will focus its commercial waste reduction programs on increasing diversion of paper and organic wastes – especially food waste. DEP estimates that more than 1.6 million additional tons of these materials could be cost-effectively diverted from disposal by 2010. However, this increased diversion will require a combination of strong partnerships and new enforcement strategies to be effective. Strategies by material category are summarized below, followed by a description of each of the specific elements of DEP's commercial waste reduction strategy.

PAPER: Paper materials make up nearly 40 percent of commercial waste disposal. A strong regional, national, and international recycling infrastructure is already in place for paper, however increased amounts of post-consumer paper and cardboard are needed to meet increasing levels of industry demand. As a result, markets for all grades of paper have a very strong long-term outlook. DEP believes that Massachusetts businesses and institutions, especially small to medium-sized businesses, can significantly increase paper recycling, and that a mix of assistance, partnerships, and enforcement can help to spur on this increased recycling, save businesses money, and support Massachusetts' paper recycling and manufacturing industries.

FOOD WASTE AND OTHER ORGANICS: Food waste and other organics make up nearly 30 percent of commercial waste disposal. The picture for food waste is much different than paper, as Massachusetts has a limited infrastructure for hauling and processing food waste. DEP estimates that more than 1.1 million tons of commercial and institutional food waste will be generated annually in Massachusetts by 2010, with less than 10 percent currently diverted. DEP believes that Massachusetts can achieve a 34 percent diversion rate for this material, or 380,000 tons per year by 2010. However, only 130,000 tons of annual food waste processing capacity is currently permitted in Massachusetts, leaving a gap of at least 250,000 tons statewide.

⁵ Although wood, shingles, and wallboard will be targeted for increased diversion, much of the projected tonnage increase in C&D recycling is expected to come from recycling increased amounts of ABC due to increased generation of those materials.

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Establishing in-state food waste processing capacity is critical because this material cannot be cost-effectively transported long distances. Like most solid waste management capacity, food waste processing capacity has been difficult to site due in large part to objections from communities about potential traffic, noise, and odor impacts.

Therefore, DEP's strategy for increasing food waste diversion will focus on simultaneously building the Commonwealth's processing and hauling infrastructure and working with targeted groups of commercial and institutional generators that generate the most food waste and have the best opportunity to cost-effectively divert food waste from disposal. These sectors include supermarkets, hospitals and other health care facilities, hotels and conventions, colleges and universities, and state institutions such as prisons.

COMMERCIAL WASTE REDUCTION INITIATIVES

NEW

- **Extending Waste Ban Enforcement to Haulers and Generators:** DEP is developing a strategy to extend waste ban enforcement beyond disposal facilities and transfer stations. DEP believes this authority exists under current waste ban regulations; however, to date DEP has chosen not to enforce waste bans against waste haulers and generators but has focused on ensuring that facilities properly implement their waste ban plans. Instead of taking enforcement, DEP also has sent letters to generators that facilities have identified as repeatedly disposing of banned materials and offered information and technical assistance resources. A wide range of recycling and solid waste stakeholders have repeatedly argued to DEP that, while solid waste facilities have an important role to play in waste ban enforcement, waste bans will not have a meaningful impact unless DEP also actively enforces them against haulers and generators that repeatedly dispose of banned materials.

Now that waste bans have been enforced by DEP at disposal facilities for several years, DEP believes that the time is right to extend this enforcement to haulers and generators. DEP is developing an expanded waste ban enforcement initiative that will begin later in 2005.

- **Establish Farm Composting Partnership with Department of Agricultural Resources (DAR):** DEP will soon finalize an agreement with DAR that will support increased farm-based composting, enabling farms to take in more food waste and increase revenue, helping to sustain farms in Massachusetts.
- **Expand Municipal Composting Operations:** DEP will work with interested cities and towns with well-run composting operations to expand those sites to accept food waste from local food waste generators.
- **WasteWise Partnership with EPA:** DEP recently established the first state WasteWise partnership with EPA, leveraging additional resources to support and recognize Massachusetts business and institutional recycling programs. This WasteWise Partnership will be used to support DEP's other targeted initiatives to increase

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commercial waste reduction, especially for medium and large businesses. As with other commercial waste reduction efforts, DEP will consider emphasizing certain business sectors within the program with the greatest additional diversion potential.

- **Continue Resource Management Contracting:** DEP will continue to support the development of Resource Management (RM) Contracting models for businesses and institutions. Through RM contracting, both the generator and the hauler share incentives for reducing trash, increasing recycling, and saving money. A recent one-year pilot project at Shattuck Hospital was successful in saving \$11,000 annually by reducing disposal by 11 percent and more than tripling recycling and other diversion.
- **Surplus Office Equipment Reuse:** DEP will continue to work with the state's Operational Services Division, other state agencies, cities and towns, and other institutions to arrange exchanges of surplus office equipment, saving money for both parties while avoiding having to send surplus, still usable office equipment for disposal. This will include developing a user-friendly website for state agencies and others seeking surplus equipment.

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- **Expand Supermarket Partnership:** DEP will continue this innovative partnership with major supermarket chains, the Massachusetts Food Association (MFA), and haulers and compost facilities to increase supermarket composting and recycling. Major elements of this partnership include:
 - Establish a memorandum of understanding (MOU) between DEP, the MFA, and major supermarket chains to establish program and performance standards for supermarket recycling and composting programs. This MOU would exempt participating supermarkets from waste ban inspections, similar to exemptions for municipalities with Department Approved Recycling Program (DARP) status.
 - Continue to provide information and hands-on technical assistance to supermarkets from leading industry consultants to help them establish and maintain effective diversion programs.
- **Build Other Business Partnerships:** DEP will seek to develop similar partnerships with other business sectors that have high levels of additional potential diversion. Hospitals and other health care services are strong candidates since they dispose of large amounts of paper in particular⁶.

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- **Continue Facility Waste Ban Enforcement:** DEP will continue to maintain a presence at solid waste facilities to ensure that they are properly implementing their waste ban compliance plans. DEP will check waste ban compliance as a routine part of all solid waste facility inspections and also will conduct targeted waste ban enforcement initiatives.

⁶ According to DEP's Commercial Waste Disposal Assessment published in 2000, the medical and health services sector disposes of more paper than any other single business sector in Massachusetts – 220,000 tons per year.

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- **Explore Waste Ban for Commercial Food Waste:** As stated in the *Beyond 2000 Plan*, DEP will consider banning commercial and institutional food waste as an item banned from disposal. Such a ban would require a greater emphasis on compliance by generators and haulers, rather than at the point of disposal, and could be phased in for different categories of food waste generators. DEP will evaluate the need for a ban based on the success of other efforts to increase food waste processing capacity and diversion. An extension of the waste bans to commercial food waste would require a regulatory change with public hearing and comment.
- **Support Municipal Recycling Programs for Small Businesses:** DEP recently worked with the Northeast Recycling Council (NERC) to establish a statewide database of business recycling programs sponsored or operated by municipalities. DEP's regional Municipal Assistance Coordinators will use this resource to support the development of new and expanded small business recycling programs in interested municipalities. Depending on contracting arrangements, cities and towns may be able to obtain revenue while reducing costs for their small businesses.
- **Recycling Market Development Assistance:** DEP's funding for recycling market development grant programs has been cut dramatically. In addition, the Chelsea Center for Recycling and Economic Development, which had provided assistance, resources, and funding to support companies that use recycled products, has closed. However, DEP remains committed to fostering recycling markets through a combination of awarding limited, targeted grants, building industry partnerships, and providing information and referrals to companies interested in using recycled feed-stocks to produce new products. Specific initiatives include:
 - Provide limited Recycling Industry Reimbursement Credit grants to support the use of target recyclable materials as feed-stocks for manufacturing processes. Target materials include organics and C&D materials.
 - Provide low interest loans from the Recycling Loan Fund, currently capitalized at \$3.1 million, to enable recycling processors and manufacturers to obtain conventional financing to support facility expansions and development of new facilities.
 - Refer interested businesses to market development assistance, resources, and information available on DEP's web site and through other agencies.
 - Work with the Executive Office of Environmental Affairs and the Operational Services Division to establish recycled product purchasing mandates for state agencies, with an emphasis on compost and construction materials.
- **Business Outreach and Information:** DEP will rely on partnerships with WasteCap and the Earth's 911 recycling web site to provide recycling and composting information to businesses.

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Residential Waste Reduction Strategy

Ninety percent of Massachusetts residents have access to convenient recycling collection programs. Due to strong recycling markets, DEP sees promising opportunities to work with cities and towns to capture significantly more material from existing recycling programs and to do so in a way that will make these programs more efficient and save municipalities money.

DEP's work to advance residential waste reduction will achieve the greatest tonnage increases from paper (all types of paper, including cardboard) and organics (yard waste and food waste). Together, these material categories represent more than 1.1 million tons of additional diversion potential, more than 75 percent of the additional diversion potential for residential waste. The strategies for these materials are summarized below, followed by a description of each of the elements of DEP's residential waste reduction strategy. *(Note: In many cases, program strategies that increase diversion of priority materials will also increase diversion of all other materials captured in a residential program, such as bottles and cans, white goods, etc.)*

PAPER: Massachusetts has a mature paper recycling infrastructure. International demand for waste paper is very strong and is expected to remain so, driving up payments for paper recycling. These high values for paper provide a powerful financial incentive for municipalities to increase paper recycling by increasing participation rates in existing programs. Such initiatives also will typically increase recycling of other materials in addition to paper, such as food and beverage containers. In addition to supporting increasing participation in existing programs, DEP will devote some resources to help municipalities maintain current recycling services and avoid backsliding and to expanding programs to collect all types of paper for recycling. Because of the promising long-term market outlook for paper and other recyclables, DEP believes that increasing paper recycling (as well as recycling of many other materials) will be cost-effective for most municipal recycling programs.

YARD AND FOOD WASTE: Strategies to increase diversion of yard waste, either through home or municipal composting programs, will be similar to those for paper, except that, in some cities and towns, there is a greater need to expand yard and food waste composting programs to make them more convenient for residents. In most cases, municipalities have established yard waste composting programs, and the greatest increases will come from expanding collection services or increasing home composting bin distribution.

Residential food waste composting collection is not widely established and is primarily limited to home composting. While residential food waste could potentially be captured through programs that also capture yard waste, Massachusetts' food waste processing infrastructure must become better established before widespread residential food waste collection programs can occur. DEP is seeking to make food waste composting more cost effective by working with commercial and institutional food waste generators, haulers, and composting facilities to expand locally available composting infrastructure. Once this system has become better established for commercial and institutional generators, it will be easier and more cost-effective for municipalities to offer food waste composting programs to their residents.

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RESIDENTIAL WASTE REDUCTION INITIATIVES

REVISED/EXPANDED

- **Municipal Recycling Savings Program:** Conduct outreach to municipal officials and residents to highlight the cost savings opportunities from strong recycling markets. DEP will provide municipalities with an outline of recommended program options to maximize capture of recyclables from existing programs through options such as Pay-As-You-Throw, recycling set out requirements, outreach and incentives, and improved contracting. These recommendations would connect with DEP assistance in each of these program areas.
- **Expand Pay-As-You-Throw:** At the end of 2004, 111 municipalities had adopted PAYT programs, serving a population of about 1.2 million (about 20 percent of the state's population). DEP's goal is to expand Pay-As-You-Throw programs so that more than 50 percent of Massachusetts residents will live in a community served by PAYT by 2010. To meet this goal, DEP will prioritize PAYT assistance to larger communities. Specific proposed initiatives include:
 - Work with EOE and the Office of Commonwealth Development to establish PAYT as a criterion for other state environmental funding, such as the Commonwealth Capital Fund.
 - Keep PAYT programs as DEP's top priority for limited municipal grants and technical assistance from DEP staff and regional assistance coordinators. DEP has dramatically increased this hands-on assistance over the past several years and plans to maintain that.
 - Enhance PAYT outreach through DEP's web page, workshops for targeted audiences and geographic regions, coordination with EPA New England staff, and outreach and assistance to individual municipalities and staff.
- **Regional Program Coordination and Technical Assistance:** DEP staff and the six regional Municipal Assistance Coordinators funded by DEP will continue to provide extensive hands-on assistance to cities and towns to improve their existing recycling and composting programs. While grant funding is limited, this technical assistance is one of DEP's best tools for increasing residential waste reduction. The municipal coordinators will bring together groups of municipalities to develop cost-effective regional program solutions, as well as work with individual towns to improve their programs. Specific areas of emphasis will include:
 - Develop and implement PAYT programs.
 - Support development of more cost-effective regional contracts and service agreements for solid waste and recycling collection and processing, yard waste and brush grinding, hazardous products collection, and purchasing of recycling equipment; helping municipalities to increase their purchasing power and deliver services more cost-effectively.
 - Provide model recycling and trash service RFPs, recycling and hauler ordinances, and contracting assistance to enable municipalities to develop more effective

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recycling and trash contracts, which are critical for municipalities to be able to save money from increased recycling and composting.

- Support local education and outreach initiatives to increase recycling participation.
- **Review Department Approved Recycling Program (DARP) Certifications:** DEP will review municipal DARP certifications to ensure that the incentives provided through DARP are working effectively. Particular focus will be placed on yard waste collection and composting programs.
- **Advance DARP Standards:** DEP will review and revise DARP recycling program standards that are currently set to expire at the end of 2005. DEP is considering extending the current standards through June 2006. Under DARP, participating municipalities that meet minimum recycling and composting criteria are exempt from waste ban inspections at disposal and transfer facilities. DEP will focus on criteria such as PAYT and other aggressive recycling participation systems to increase diversion from existing programs and reduce disposal costs.
- **Springfield Materials Recycling Facility (MRF) Contract:** DEP has awarded a 10-year contract to Recycle America Alliance to operate the Springfield MRF (2005-2015, with a 5 year extension option). The contract was awarded through a competitive bid and provides approximately 90 contract municipalities with guaranteed recycling revenue of \$15.67 per ton of recyclables delivered, and an additional share of material revenues when the index price of recyclables exceeds \$40 per ton. DEP will continue to manage the Operator's contract but has transferred responsibility for operating the weigh scales and maintaining the facility to the Operator, thereby lowering DEP's costs.

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- **Recycling and Composting Equipment and Education:** In addition to PAYT, education and outreach are important to maintain and increase participation in recycling and composting programs. Wherever possible these efforts will be focused on priority material categories. Specific initiatives include:
 - Provide limited grants for educational materials and technical assistance, targeting these to municipalities with new PAYT programs and other municipalities making significant program changes.
 - Support pilot municipal programs to assess how new containers and equipment can increase diversion, particularly of paper, from existing programs.
 - Provide grants for new items such as kitchen food waste buckets to support home composting and public space recycling baskets to capture bottles and cans consumed away from the home.
 - Maintain state contracts for recycling, composting, and hazardous products materials, equipment, and services. Municipalities rely on these contracts as an efficient means of procuring needed equipment and services without having to go out to bid.
 - Reduce the cost of municipal grants for customized recycling education materials by reducing the size of mailers and using a lower cost class of mail to distribute to

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residents. All DEP-granted recycling materials will be mailed en masse, instead of staggering the mailings according to municipal requests. This will further reduce the cost of the grants.

- Produce generic press releases for local use and disseminate through the regional Municipal Assistance Coordinators.
 - Support the Earth's 911 web site to provide free local recycling information via the web.
 - Partner with other state and regional solid waste and recycling associations such as MassRecycle, the Massachusetts Chapter of the Solid Waste Association of North America, the National Solid Waste Management Association, the Construction Materials Recycling Association, and the Northeast Resource Recycling Association to hold jointly-sponsored workshops and conferences.
 - Solicit sponsors to offset the direct costs of workshops and conferences for municipal officials and recycling stakeholders.
- **Home Composting Programs:** Home composting programs save municipalities money by reducing the amount of trash they need to collect and dispose and benefit residents who can produce compost for use on their lawns and gardens. DEP will continue to promote home composting through:
 - Home composting and healthy lawn and landscape workshops.
 - Targeted grants for home compost bins and kitchen food waste collection buckets.
 - Home composting exhibits and demonstrations at conferences, public events, and horticultural shows.
 - Distributing home composting literature, videos, and press releases to raise awareness of the benefits of home composting and how to compost.
 - **Recycling Market Development/Product Stewardship:** The recycling market development strategies described above under the commercial waste reduction strategy will also support market development for priority residential wastestreams. Product stewardship approaches that increasingly involve manufacturers and retailers in managing products such as electronics after use can reduce recycling and disposal costs for cities and towns for these materials.
 - **State and Municipal Purchasing Programs:** DEP will continue to work with the Operational Services Division and other state agencies to support State Sustainability initiatives for state agencies and provide cost-effective opportunities for municipalities and state agencies to buy recycled and environmentally preferable products. DEP will support recycled purchasing mandates for EOEA agencies, especially for compost and construction materials.
 - **Expanded Bottle Bill:** DEP will continue to support passage of an expanded bottle bill to increase recycling of juice, water, and other beverage containers consumed away from the home. DEP will seek to expand recycling programs at large public events and frequently used public venues, which would work well with an expanded bottle bill system.

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- **Bottle Bill Administration:** DEP will continue to oversee ongoing coordination of the Commonwealth's bottle deposit law, including:
 - Assisting EOEa with bottle bill policy and regulatory development
 - Handling questions and complaints from consumers, redemption centers, distributors, and retailers regarding bottle bill issues
 - Overseeing redemption center registrations
 - Tightening bottle bill enforcement against fraudulent redemption.
 - Awarding redemption center grants.
- **Electronics Infrastructure and Regional Programs:** Over the past five years, DEP has worked with municipalities to establish an extensive collection system for computer monitors that contain cathode ray tubes, as well as televisions and other computer equipment. That system serves most residents in Massachusetts and has received national recognition. DEP will continue to provide information and technical assistance to support these efforts, while supporting regional and legislative initiatives to improve electronics collection and recycling programs.

Construction and Demolition Debris Waste Reduction Strategy

The C&D recycling rate is already very high (75 percent in 2003), primarily because asphalt, brick, and concrete (ABC), which make up the bulk of C&D tonnage, is recycled at a very high rate. However, other C&D materials such as wood, shingles, wallboard, etc. are only recycled at about a 10 percent rate.

Materials produced by C&D processors are primarily reused at landfills as fines for daily cover and residuals for grading and shaping purposes. These are relatively low value uses and have resulted in odor problems at a number of facilities, and also rely on landfill operations in Massachusetts that are continually declining. Therefore, it is important that DEP continue to stimulate additional market development to maintain and increase diversion of targeted C&D materials. Fortunately, most C&D is generated by a relatively small group of companies, which makes it easier for DEP to target waste reduction initiatives. The strategies for reducing these material categories are summarized below, followed by a description of each of the elements of DEP's C&D waste reduction strategy.

WOOD: DEP's strategy for increasing diversion of wood from disposal is centered on a disposal ban on wood, combined with technical assistance and partnerships to stimulate market development. The ban is expected to take effect in 2006 and has already stimulated C&D processing investments in Massachusetts. DEP will work with solid waste facilities to implement the ban and with the construction and demolition industry and other stakeholders to develop additional markets for C&D wood, particularly clean wood that can be separated.

GYPsUM WALLBOARD: DEP will continue working with gypsum wallboard manufacturers on their wallboard recycling commitments and with the construction industry to develop programs to recycle clean gypsum wallboard from construction sites. As markets develop for wallboard recycling, DEP will consider adding gypsum wallboard as an additional material under DEP's waste ban regulations. This would require regulatory revisions and public hearing and comment.

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ASPHALT SHINGLES: DEP will take a similar approach with shingles as with gypsum wallboard. DEP will work to stimulate the development of additional recycling markets and diversion opportunities in advance of potentially adding shingles to the list of waste ban materials. This would require regulatory revisions and public hearing and comment.

C&D WASTE REDUCTION INITIATIVES

NEW

- **Complete Hydrogen Sulfide Landfill Guidance:** DEP will finalize guidance on controlling hydrogen sulfide emissions from landfills and inactive landfill closures. This will build on experience gained with addressing significant problems at several landfill closure projects over the past several years.

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- **Build C&D Product Stewardship Initiatives:** DEP will work with manufacturers of construction materials to develop and build product stewardship initiatives where possible. This will include supporting the implementation of existing manufacturer commitments for carpet and wallboard and exploring product stewardship initiatives for other materials. When voluntary product stewardship initiatives are not successful, DEP will pursue regulatory controls such as waste bans more aggressively.
- **C&D Capacity Analysis:** DEP will prepare additional capacity analyses for C&D, including the projected capacity of inactive landfill closure projects and landfill daily cover uses. These capacity analyses will also address management of other materials such as contaminated soils and dredge sediments that may be used for landfill related uses.
- **Oversee Inactive Landfill Closures:** DEP will continue to oversee inactive landfill closure projects. As part of this effort, DEP will reassess existing policies on landfill closures to ensure that they are properly addressing management of residual C&D materials

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- **Promulgate and Implement C&D Waste Ban:** DEP will promulgate revisions to 310 CMR 19.000, the solid waste permitting regulations, that include a disposal ban on ABC, wood, and metal. This ban is expected to have the greatest effect on increasing diversion of wood, since ABC and metal are already recycled at high rates. To support the ban, DEP will revise the waste ban guidance, hold trainings on the ban, and review and approve revised waste ban plans. Over time, DEP will explore adding other C&D materials to the list of banned materials as markets for those materials develop and grow. Potential additional banned materials include asphalt shingles, gypsum wallboard, and carpet. Any extension of the waste bans would require a regulatory change with public hearing and comment.

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- **Promote C&D Market Development:** DEP will continue to use financial incentives such as Recycling Industry Reimbursement Credit grants and Recycling Loan Fund loans to promote development of new processing outlets and end markets for C&D materials.
- **C&D Waste Reduction Outreach:** DEP will continue outreach on C&D waste reduction for the construction and demolition industries by distributing information via DEP's new C&D web page and by speaking at conferences and workshops.
- **SWAC C&D Subcommittee and Workgroups:** DEP will continue to hold meetings of its SWAC C&D Subcommittee and Subcommittee workgroups on an as-needed basis.

Toxicity Reduction Strategy

Reducing the toxicity of the waste stream poses different challenges. To make significant progress in this area requires either significant state or local funding or aggressive product stewardship initiatives, neither of which is in place in Massachusetts. Therefore, DEP's toxicity reduction strategy is to maintain existing progress and seek limited new initiatives for priority materials such as mercury-containing products. As with other waste reduction strategies, DEP will seek to build partnerships among local governments, with business groups, and with other state agencies and universities to achieve these goals as cost-effectively as possible.

TOXICITY REDUCTION INITIATIVES

NEW

- **Toxics Use Reduction Assistance, Research, and Technology Development:** DEP will focus on supporting Office of Technical Assistance (OTA) and TURI programs to test and promote alternatives to toxic chemicals used in Massachusetts industries and communities. These efforts will emphasize chemicals such as mercury, lead, and arsenic identified as High Priority Substances that may be contained in products disposed of as solid waste. These program efforts include extensive workshops, training sessions, industry dialogues and facility site visits.
- **Supply Chain Initiatives:** TURI has convened supply chain working meetings to learn about new trade issues and technologies and to design new products to be competitive in changing markets. These include:
 - Exploring alternatives that would eliminate or reduce the use of lead and brominated flame retardants in the coated wire industry.
 - Developing lead-free solder applications for electronics.
- **Lowell Center for Sustainable Production:** The Sustainable Production and Consumption Program works to promote sustainability in *all* of the life cycle phases of a product or service — including purchase, use, manufacture, and disposal. DEP will partner with solid waste related components of the Lowell Center's Sustainable Hospitals program.

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- **Healthy Lawn and Landscape Workshops:** DEP will continue to hold Healthy Lawn and Landscape Workshops that educate residents on pesticide use and ways to reduce use of fertilizers and pesticides through alternative lawn care practices.
- **Toxics Use Reduction Grants:** DEP will continue to partner with TURI on their Toxics Use Reduction Network grants to support toxics use reduction and pollution prevention on the local level. Recent grants have focused on pesticides use reduction.

REVISED/EXPANDED

- **Provide Regional Program Coordination and Technical Assistance:** Through Municipal Assistance Coordinators, DEP will work with cities and towns to maintain cost-effective collection programs to provide ongoing access for residents to safely dispose of hazardous products. These efforts will focus on organizing shared regional and reciprocal collection programs that provide a basic level of access at a relatively low cost to participating towns.

CONTINUED

- **Oversee Municipal Waste Combustor Material Separation Plans:** DEP will continue to work with municipal waste combustors and their contract municipalities to ensure that Material Separation Plans (MSPs) for mercury are implemented and revised as needed to maximize diversion and safe management of mercury-containing products from the waste stream. These plans focus on initiatives such as:
 - Collection programs for residents, schools, and businesses for products such as fluorescent lamps, thermostats, and batteries.
 - Education and outreach on mercury-containing products
 - Thermometer exchanges
 - School mercury cleanouts
- **Support School Chemical Management Programs:** Provide information and guidance to school systems on improving chemical purchasing, storage, use and management practices to reduce the use of hazardous chemicals and ensure proper disposal where needed.
- **State Hazardous Product Collection Contracts:** DEP will continue to work with the Operational Services Division to maintain statewide contracts that support municipal hazardous product collection programs, eliminating the need for municipalities to go out to bid for collection events themselves.
- **State Sustainability Toxics Use Reduction:** DEP will continue to work with the State Sustainability Program and Operational Services Division to increase purchases of lower-toxicity and less hazardous products by state agencies and authorities. DEP will also partner with the Toxics Use Reduction Institute's (TURI's) efforts to support the development of environmentally preferable cleaning products.

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3: 2003 SOLID WASTE DATA AND CAPACITY PROJECTIONS

(To be completed in a later draft. Summary initial draft data points (still to be finalized) are listed here. This section will be about 15 pages including all tables.)

Compared with 2002:

- Total generation remained flat at 13.2 million tons (a decrease of 30,000 tons)
- Overall diversion increased 1 percent to 6.9 million tons (52 percent total diversion)
- Total recycling remained flat at 6.2 million tons (47 percent recycling rate)
- The MSW recycling rate increased from 31 percent to 34 percent
- Total disposal dropped 2 percent to 6.3 million tons
- Net export dropped slightly to 1.5 million tons (a decrease of 60,000 tons)

Capacity Projections

Draft capacity projections show in-state landfill capacity gradually decreasing from now through 2011, with more significant decreases from 2012-2014. Assuming slight generation and recycling increases, net export is projected to grow to by more than 1 million tons by 2012.

4: WASTE MANAGEMENT CAPACITY AND FACILITY OVERSIGHT

Change to No Net Import/Export Policy

Given the lack of significant additional solid waste management capacity coming on line in recent years and projections that net export will continue to grow over the coming decade, DEP recognizes that Massachusetts will continue to be a net exporter of waste for the foreseeable future. However, DEP believes that there are important benefits to striving towards a balanced waste management system. Therefore, DEP will maintain a long-term goal of reaching no net import/export, but will not attach any milestone date to this goal. This change recognizes that regional markets are the primary driver of waste management capacity decisions. It also recognizes that a significant export infrastructure has developed over the past several years to handle waste generated in Massachusetts. DEP will continue to assess and plan for the Commonwealth's solid waste management needs, but will focus its resources on promoting waste reduction while relying on markets to ultimately guide capacity decisions.

In-state Waste Management Capacity Need

DEP will maintain the goal of disposing of only the “irreducible minimum” amount of waste and will continue to promote increased waste reduction through its various waste reduction programs. DEP will place special emphasis on supporting the development of additional in-state organics processing capacity, which can help businesses, cities and towns save money, reduce pressure on disposal capacity, create a valuable product, and support creation of additional jobs in Massachusetts. In addition, DEP will:

- Provide resources and information to support local Boards of Health responsible for reviewing proposals for processing facilities. This would include generic, statewide information for different categories of facilities, including the statewide benefits, typical facility profiles, local impacts to address, and best management practices.
- Ensure that current facilities are operating soundly by providing information on best management practices. Enforce against poorly operated facilities to prevent nuisance impacts.
- Develop and provide capacity analyses for C&D and organics wastestreams, in addition to DEP's disposal capacity analysis.
- Review and update as necessary components of the State's Disaster Debris Management Plan related to the Master Plan.

Disposal Capacity

Unless and until net export drops dramatically, DEP will no longer allocate disposal capacity for new or expanded landfills. DEP will review all landfill proposals based solely on site assignment and permitting requirements.

DEP will maintain a moratorium on new municipal waste combustion capacity due to concerns about mercury emissions. Combustion facilities represent the largest in-state source of mercury emissions. In 2002, the seven municipal waste combustors emitted an estimated 558 pounds of

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mercury, which DEP estimates is 57 percent of point source mercury emissions in Massachusetts. DEP believes that further expanding combustion capacity, which already represents nearly 50 percent of Massachusetts total disposal capacity and 65 percent of in-state disposal capacity, is inconsistent with EOEA's Zero Mercury Strategy and the New England Governors/Eastern Canadian Premiers Mercury Strategy.

Solid Waste Regulations, Permitting, and Compliance and Enforcement

Since the *Beyond 2000 Plan* was issued, DEP promulgated major revisions to its Site Assignment regulations (310 CMR 16.000) and is nearing completion of major revisions to its Permitting regulations (310 CMR 19.000). DEP also has issued several guidance documents supporting these regulatory changes. These regulatory and policy initiatives maintain the policy framework as established in the *Beyond 2000 Plan*.

DEP is continuing to develop approaches to effectively oversee solid waste facilities and materials management with reduced staffing levels. New approaches and areas of focus include:

- Developing specific guidance on addressing hydrogen sulfide emissions from landfills. DEP expects to complete this guidance later in 2005.
- Developing a proposed certification approach and permit by rule regulations for smaller transfer stations.
- Improving oversight and tracking of landfill gas emissions from both active and inactive landfills.
- Extending waste ban enforcement to haulers and generators.